Discriminating the Forest from the T

Conceptual Considerations

- **What constitutes a major software release?**
  - Must be a significant scientific breakthrough
  - Should involve improvements that the user community wants
- **How often should major releases occur?**
  - Should not happen too frequently
  - As project mature, the time period between releases expand
- **Are there other considerations?**
  - Complete and thorough testing is essential
  - The efficacy of the release must be verified
  - The product must be fully documented

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AIRS Version Release History

- **AIRS Public Software Releases:**

• V2	March 21, 2003	L1 only
• V3	September 13, 2003	L1 & L2
• V4	April 18, 2005	L1 through L3 (first L3)
• V5	July 26, 2007	L1 through L3
• V6	March 12, 2013	L2 & L3 only (L1 still V5)

- **Dwell time between releases has increased**

• V2 to V3	6 months	
• V3 to V4	1.5 years	
• V4 to V5	2.25 years	
• V5 to V6	5.75 years	Added time to resolve trends-over-time issue
• V6 to V7	?	

V7 Tenants

- **Characteristics of AIRS Version 7 data products:**
  - HDF5 data standard
  - Support netCDF, CF compliance, ISO19115 data conventions
  - Support enhanced modeling and visualization tools:
    – Matlab, IDL + other mapping, visualization tools
  - Be capable of supporting multi-instrument studies
- **Externalities and Synergy between AIRS and SNPP**
  - Working on same V6+ algorithm at this time
- ***Synergies of scale and utility can be realized though sharing work-efforts of both projects***
    - Simpler to maintain one code base than two
    - Easier to verify algorithmic consistency
    - Most efficient use of small workforce on both projects
    - A “win-win” approach

Understanding What V7 Should Be

- **When delivered, AIRS V7 must conform to our past practices for major software releases to the GES DISC:**
  - V7 must be robust and fully verified
  - V7 must represent a significant improvement over V6
- **Before we release V7**
  - We need to specify which features and enhancements are candidates for inclusion
  - It is essential that the AIRS Science Team arrive at a consensus of what V7 should

It will be extremely beneficial to the AIRS Project and the Sounder SIPS effort if we can merge code bases for V7 and the GSFC version of SIPS L2 code during the V7 timeframe.

Proposed V7 Features

- **V7 improvements proposed by GSFC:**
  - Improved water vapor profile
  - Improved ozone profile
  - Improved ozone retrieval over ocean impacted by dust
  - Improved stratospheric temperature retrieval during polar winter
  - Incorporation of updated neural-net

- **Other potential enhancements:**
  - Improved RTA
  - Possible improvements of using various climatologies, especially land surface emissivity
  - New retrieval specifications for CO and CH4 retrievals
  - Updated cloud properties retrieval
  - Additional L1C improvements
  - Improve local angle correction calculations

- **Other concepts and considerations?**

V7 Concerns

- **V7 seems to be a list of improvements desired by some…**
- **What continues to be missing is a statement of what improvements are needed beyond V6 to warrant a V7 delivery**
- **Hopefully, we can arrive at this list soon**
- **Despite not knowing exactly where we want to go…**
  - **the following V7 schedule is proposed:**

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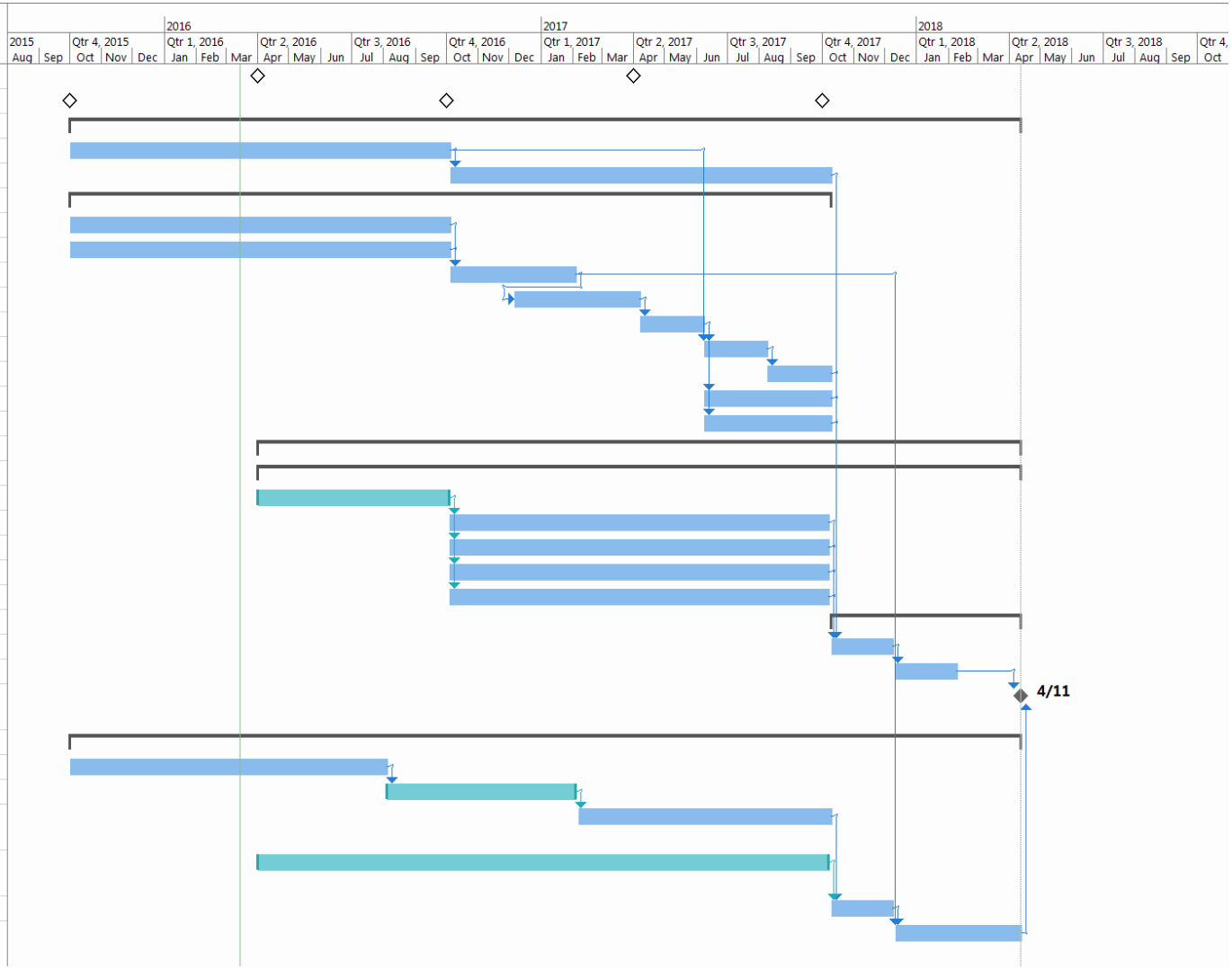
V7 Schedule

ID	Duration	Task Name
1	**523 days**	**Spring STM**
5	**522 days**	**Fall STM**
9	**660 days**	**V7 Product Development**
10	12 mons	Level 1B
11	12 mons	Level 1C
12	**528 days**	**Level 2**
13	12 mons	Test Dev + V6 Baseline
14	12 mons	Software Updates
15	4 mons	Initial Testing
16	4 mons	Algorithm Updates
17	2 mons	Second Testing
18	2 mons	Final Build
19	2 mons	Product Testing
20	4 mons	Level 3
21	4 mons	OBS4MIPS
22	**529 days**	**Level 2 Post Processors**
23	**529 days**	**Software Integration**
24	6 mons	CO2 V6
25	12 mons	CO2 V7
26	12 mons	Clouds
27	12 mons	SO2 & Dust
28	12 mons	O3
29	**132 days**	**Production and Distribution**
30	2 mons	Prep V7 for DAAC
31	2 mons	DAAC Integration
32	0 days	Product available to the public
33	**660 days**	**Level 4 / Applications**
34	10 mons	Standard Products Into GIBS
35	6 mons	Anomaly Products into GIBS
36	8 mons	Point and Click Products (Ash, SkewT)
37	18 mons	Science Products into GIBS (Drought, etc.)
38	2 mons	Applications Tool Integration
39	4 mons	Retest Products with V7 PGE



V7 Important Dates

- **Level 1B and Level 2 Testing, Verification Cycle**
  - Finish coding SEP 2016
  - Initial testing / updates JUN 2017
  - Final build / checkout L2 AUG 2017
- **Incorporate post-processors L1C and L3**
  - Complete L1C SEP 2017
  - L3 OCT 2017
  - Post-Processors OCT 2017
- **Final Integration, Build, Verification**
  - Final Build OCT 2017
  - Final Verification OCT 2017
- **Pack and Deliver to GES DISC**
  - Code & Documentation Delivered DEC 2017
  - Integration and Test FEB 2018
  - Begin Operations APR 2018
  - Public Availability APR 2018

Which way to V7